ABSTRACT OF THE DISCLOSURE

A method and apparatus for identifying and differentiating multi-component mixtures and identifying contamination thereof using direct comparison of characteristics of the analyte and characteristics of a standard sample of a known compound. These characteristics were obtained using methods and apparatus of spectrum analysis ensuring the possibility of receiving characteristic optical shapes (multi-dimensional signatures) of samples under comparison, which signatures represent a total set of spectral distributions of intensity values for light subjected to interaction with a sample, and the process of correlation of relative intensity values of light subjected to interaction with a sample at assigned wavelengths. The comparison of different optical shapes (signatures) through comparing the respective intensity values at the assigned wave-lengths, ensures reliable identification of samples and obtaining information as to contamination or non-contamination, which may be identified afterwards by appropriate analytical methods.

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